

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of  
Takeshi KOBAYASHI et al.

Appln. No.: 10/560,460      Group Art Unit: 2831

Filed: December 14, 2005

For: SEPARATOR FOR ELECTRIC DOUBLE LAYER CAPACITOR  
AND ELECTRIC DOUBLE LAYER CAPACITOR CONTAINING SAME

DECLARATION UNDER 37 C.F.R. 1.132

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

I, Takeshi KOBAYASHI, citizen of Japan, residing at  
c/o Japan Vilene Company Ltd., 7, kitatone, Koga-shi,  
Ibaraki 306-0213, Japan, do sincerely and solemnly declare:

THAT I am by profession a chemical engineer having  
earned a Bachelor's degree in environmental chemistry from  
Utsunomiya University in March, 1989;

THAT since April, 1989, I have been an employee of  
Japan Vilene Company Ltd., and have been engaged in the  
development of wiping materials, the development of backing  
materials for synthetic leathers, the development of a  
nonwoven fabric for water treatment, the development of a  
separator for electric double layer capacitor, the  
development of a separator for lithium ion polymer battery,  
and the development of a separator for lithium ion battery;

THAT I am a coinventor of the invention of the above-  
identified U.S. Patent Application (referred to as "the  
present invention" hereinbelow) and therefore, am completely  
familiar with the present invention;

THAT I have reviewed and understood the Office Action  
of November 28, 2008;

THAT I have read and understood the Declaration executed by Masaaki KAWABE (referred to as "the first declaration" hereinbelow); and

THAT in order to show the patentability of the present invention, the following experiment was carried out under my direction and supervision.

#### EXPERIMENT

##### Evaluation of properties

Various properties of the ultrafine fibrous aggregate prepared in the EXPERIMENT of the first declaration as a separator were evaluated in accordance with the methods described in "(1) Evaluation of property of holding electrolyte", "(2) Measurement of internal resistance", "(3) Measurement of leakage current", and "(4) Evaluation of property of preventing short circuit" of the present specification.

#### RESULTS

The results obtained in the above procedures (2) are shown in Table A.

Table A includes the data of the separator prepared in Example 1 of the present specification, cited from Table 2 of the present specification. The separator of the present invention prepared in Example 1 of the present specification was heat-treated at 160°C for 5 minutes (mass per unit area: 4.6g/m<sup>2</sup>, thickness: 24 µm).

As shown in Table A, the leakage current was reduced by the heat-treatment at 160°C, and as a result, the fractional defective was remarkably improved.

Table A

Heat-treatment (HT)	Experiment 1 Without HT	Example 1 HT at 160°C
Liquid-holding rate under pressure (%)	250	250
Internal resistance (Ω)	2.0	2.1
Leakage current (mA)	0.017	0.012
Fractional defective (%)	60	0

I, the undersigned declarant, declare further that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001, or Title 18, of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Singed this 17th day of April, 2009.

Takeshi Kobayashi  
Takeshi KOBAYASHI